REMARKS

The Office Action mailed December 1, 2005 has been reviewed and carefully considered.

Claims 21, 23-24, 26 and 28-33 are pending.

Claims 21, 26 and 29 have been amended to clarify for the Examiner the inventive aspects of the present invention.

Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

The Examiner has rejected claims 31-33 under 35 U.S.C. §112, paragraph 1, citing a lack the support in the specification for the integration of a POTS digitizer into a DSLAM. The Applicant respectfully contends that the Examiner's citation in support of the rejection of claims 31-33 may have mistakenly come from the original specification, instead of the Substitute Specification submitted on April 2, 2002. However, the paragraph cited by the Applicant in support of a POTS digitizer integrated with a DSLAM is disclosed at page 5, lines 25-29 of the original specification. The following paragraph appears at page 8, line 22 through page 9, line 12 of the Substitute Specification. (emphasis added).

> "Therefore, a system and method are presented which solve the problem of offering POTS from the DSL network and also enable the DSL service provider to concentrate the primary and secondary telephone traffic locally. This means a DSL service provider does not need to have a one-to-one mapping per POTS line. *This invention provides a piece of equipment to the DSL network. This can be integrated into the traditional*

DSLAM or can be an entirely different piece of equipment. The piece of equipment functions as a POTS terminator and digitizer. The function of this entity is to terminate the POTS line, for example, at the central office and digitize the voice, convert it to ATM, and then terminate it into the DSL network at the point of the ATM switch. The POTS terminator has similar functionality to the customer CPE device 33-1 in Fig. 3, in terms of signaling and digitization of the voice signal and converting the signal into an ATM format. All voice ports on the customer CPE device can be carried through the DSL network, and in the event of a power failure, a relay or a switch in the CPE device can connect one of the phones directly to the POTS line."

The Applicant respectfully requests the withdrawal of the Examiner's 35 U.S.C. §112 rejection in light of this clarification.

Claims 21, 23-24, 26 and 28-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kaplan et al., (U.S. Patent No. 6,141,339, hereinafter Kaplan) in view of Gerszberg et al., (U.S. Patent No. 6,359,881, hereinafter Gerszberg) and Gupta et al. (U.S. Patent No. 6,731,627, hereinafter Gupta), further in view of Bellenger et al. (U.S. Patent No. 6,320,867).

As noted by the Examiner, the combination of Kaplan, Gerszberg and Gupta do not teach aggregating digitized and ATM encapsulated POTS signals for transmission over a high bandwidth link such as a DS1, DS3, etc., for coupling to a telco switch, as shown in FIG. 22. The Examiner has cited Bellenger as teaching a method and

system for statistical multiplexing that would be obvious to combine with the teachings of Kaplan, Gerszberg and Gupta, and that would allow increased traffic over a digital transmission line.

The Applicant respectfully traverses the Examiner's assertion that the teachings of Bellenger would be obvious to combine with those of Kaplan, Gerszberg and Gupta. The present invention would, therefore, not be obvious to one of ordinary skill in the art from the teachings of the cited patents.

The teachings of Bellenger refer to an "invention provid[ing] apparatus for relieving congestion associated with interfacing voice-band data, and broadband data, with a network such as [a PSTN]" and "a hierarchical system for converting digital transmissions on a network between a first protocol and a second protocol". (Bellenger. Abstract, Paragraphs 1 - 2). The Applicant respectfully asserts that the teachings of Bellenger do not disclose, nor even suggest, a

> "POTS digitizer converting an analog signal into a digital signal in a first format in the event of a failure at a customer site. said first format being an ATM-compatible format; said POTS digitizer including a statistical multiplexer, said statistical multiplexer multiplexing at least one digital signal in an ATM format; and said POTS digitizer coupling the digital signal in the first format over a digital signal line to the ATM switch connected to a telco switch"

as shown in Claim 1 of the present invention.

Instead, Bellenger seems to be teaching a method for reducing the number of physical line cards required to handle incoming voice and data sessions. ("The current invention avoids the bottlenecks associated with current subscriber line reception

techniques such as dedicating modems to each subscriber line, and instead offers a hierarchical reception environment, dynamically configurable for both average of peak data throughput." (Bellenger, Column 6, Lines 39-44). Furthermore, as described in Columns 6-9, the statistical multiplexer of Bellenger is a system and method for reducing the hardware requirements of a telephone Central Office (CO) installation. Bellenger does not mention the concept of a POTS digitizer with integrated statistical multiplexer for providing continuous voice capabilities in the event of a system failure.

The Applicant respectfully draws the Examiner's attention to FIG. 4 of Bellenger, which shows the Bellenger invention outputting data to the backplane bus (401A-D FIG. 4). Data transmission over such a backplane is inherently short haul, as the backplane bus merely allows interconnection of multiple components located at the same physical location. The backplane used in telecommunications equipment is designed to allow expansion of the equipment at a telco site by simply plugging additional components into the backplane. Backplane setups are only economical when used within the telephone rack equipment environment, as their expandable nature makes them far too expensive for any kind of transmission over distances of more than a few feet.

On the other hand, the present invention uses a statistical multiplexer to transmit data over a digital signal line (DS-1, DS-3 or similar, see FIG 22). In contrast to a backplane, these digital signal lines are used to carry long haul data using a Pulse Code Modulation (PCM) transmission protocol. DS-type lines are dedicated lines and are not designed with the same expandability as backplanes. In contrast to a telco backplane setup, the nature of digital signal lines such as a DS-1 or DS-3 make them suitable for transmission of data over large distances. These digital signal lines would be completely

unsuitable for use within telephone company rack equipment since each digital signal line requires a dedicated physical line as well as dedicated termination or junction equipment. This ability to transmit digitized and multiplexed signals over a digital signal line allows the POTS digitizer of the present invention to be located remotely from the central office, providing further redundancy in case of a failure such as a power outage.

Additionally, Bellenger discloses, in Columns 15-19, the invention controlling the setup and handling of resources for incoming calls. Specifically, Bellenger describes :

> "DSP resources for transmitting and receiving incoming and outgoing subscriber line traffic are allocated cooperatively by the local control card 404 operating in conjunction with the global control card." (Column 16, Lines 6-9).

Bellenger also describes the invention managing the processing processing resources :

> "When no data is being transmitted, DSP, Network, and backplane bus resources can be reallocated. In an embodiment of this invention, this process involves the receiving DSP negotiating a lower baud rate for the sending and/receiving voice-band or broad-band modem. When this takes place, the control units, i.e. local and global, will reallocate the monitoring of the subscriber line to the primary DSP Then, backplane bus, network and backup DSP resources can be reallocated." (Column 16, Lines 27-36).

Therefore, the Bellenger teaches a system and method for managing call system setup and allocation and reallocation of system resources. The contemplated and

exemplary embodiments of the present invention, on the other hand, use a POTS digitizer including a statistical multiplexer to convert incoming call signals into ATM formatted signals before multiplexing the signals together to be transmitted over a digital signal line, such as a DS-1 or DS-3, to the ATM equipment.

Based on the above stated differences between Bellenger and the present invention, the Applicant respectfully asserts that not only would it not be obvious to one skilled in the art to combine Bellenger with the teaching of Kaplan, Gerszberg and Gupta, but that Bellenger actually teaches away from the application of a statistical multiplexer as shown in the present invention. The present invention makes use of a statistical multiplexer within a POTS digitizer to digitize and multiplex voice signals before transmission over a digital signal line in the event of a failure of the normal broadband modem architecture. As taught by Bellenger, the system and method for statistical multiplexing is used to manage processing resources, and convert and multiplex signals before transmission over traditional telephone equipment backplane setups. The use of Bellenger in the present invention would result in a system devoid of the redundancy and lifeline voice capabilities contemplated in the present invention.

It would not be obvious to one skilled in the art to use the statistical multiplexer described in Bellenger for the same purpose as shown in the present invention. Additionally, any attempt to use the Bellenger system and method in the present invention would require extensive experimentation and redesign, even by one highly skilled in the art, before a working system were developed.

Independent claims 21, 26 and 29 have been amended to include the transmission of the digitized and multiplexed signal over a digital signal line. The Applicant believes that independent claims 21, 26 and 29, as amended, clarify why it would not be obvious to one skilled in the art to combine Bellenger with Gupta, Gerszberg and Kaplan, with the independent claims being therefore patentably distinct over the prior art. As claims 23-24, 28 and 30-33 depend from claims 21, 26 and 29, the Applicant believes that these independent claims are patentably distinct over the prior art as well, for at least the reasons stated.

In view of the foregoing, the Applicant respectfully requests that the rejections of the claims set forth in the Office Action of December 1, 2005 be withdrawn, that pending claims 21, 23-24, 26 and 28-33 be allowed, and that the case proceed to issuance of Letters Patent in due course. Early and favorable reconsideration are earnestly solicited.

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to Applicant's representatives Deposit Account No. 07-0832.

Respectfully submitted,
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